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**west virginia** department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
www.dep.wv.gov

June 04, 2015

**WELL WORK PERMIT**

**Horizontal 6A Well**

This permit, API Well Number: 47-6900191, issued to SWN PRODUCTION COMPANY, LLC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: GLENN DIDRIKSEN OHI 10H

Farm Name: DIDRIKSEN, GLENN

**API Well Number: 47-6900191**

**Permit Type: Horizontal 6A Well**

Date Issued: 06/04/2015

**Promoting a healthy environment.**

**06/05/2015**

## PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

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### CONDITIONS

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov) within 30 days of commencement of drilling.

WW-6B  
(10/14)

API NO. 47- 69 -  
OPERATOR WELL NO. Glenn Didriksen OHI 10H  
Well Pad Name: Glenn Didriksen PAD

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

1) Well Operator: SWN Production Co., LLC 494512924 69- Ohio 3-Liberty 648-Valley Grove  
Operator ID County District Quadrangle

2) Operator's Well Number: Glenn Didriksen OHI 10H Well Pad Name: Glenn Didriksen PAD

3) Farm Name/Surface Owner: Glenn Didriksen Public Road Access: Battle Run Road

4) Elevation, current ground: 1382' Elevation, proposed post-construction: 1382'

5) Well Type (a) Gas  Oil  Underground Storage   
Other

(b) If Gas Shallow  Deep   
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):  
Target Formation- MArcellus, Target Top TVD- 6350', Target Base TVD- 6432', Anticipated Thickness- 82, Associated Pressure- 4095'

8) Proposed Total Vertical Depth: 6517'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13,550'

11) Proposed Horizontal Leg Length: 8487'

12) Approximate Fresh Water Strata Depths: 194'

13) Method to Determine Fresh Water Depths: from log analysis and nearby water wells

14) Approximate Saltwater Depths: 781

15) Approximate Coal Seam Depths: 661'

16) Approximate Depth to Possible Void (coal mine, karst, other): 661' abandoned mine

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes  No

(a) If Yes, provide Mine Info: Name: \_\_\_\_\_  
Depth: \_\_\_\_\_  
Seam: \_\_\_\_\_  
Owner: \_\_\_\_\_


**Received**

**JUN - 3 2015**

*GCS*  
*6/3/15*



18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	J-55	54.5#	736'	736'	582 sx/CTS
Coal	9 5/8"	New	J-55	40#	2300'	2300'	847 sx/CTS
Intermediate	7"	New	P-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	P-110	20#	13,550'	13,550'	had 974sx 1703 lal sx/100' inside in 
Tubing	2 3/8"	New	P-110	4.7#	Approx. 6913'	Approx. 6913'	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Max. Associated Surface Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	0.020	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	0.020	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	0.020	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	0.020	Class A	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	0.020	Class A	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190				
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

Received

JUN - 3 2015

GCS  
6/3/15



\*\*\*Ref: 2013-78

SLB Cement Additives

Product Name	Product Use	Chemical Name	CAS Number
D046	antifoam	Fuller's earth (attapulgit)	8031-18-3
D130	polyester flake - lcm	Polypropylene glycol	25322-69-4
S001	calcium chloride	polyethylene terephthalate	25038-59-9
		calcium chloride	10043-52-4
<b>SPACER</b>			
D130	polyester flake - lcm	polyethylene terephthalate	25038-59-9
<del>D023</del>	<del>polyester flake - lcm</del>	<del>attapulgit</del>	<del>8031-18-3</del>
D046	antifoam	Fuller's earth (attapulgit)	8031-18-3
D130	polyester flake - lcm	Polypropylene glycol	25322-69-4
D044	granulated salt	polyethylene terephthalate	25038-59-9
D153	Anti-Settling Agent	sodium chloride	7647-14-5
		chrystalline silica	14808-60-7
<b>SPACER</b>			
D020	bentonite extender	bentonite	1302-78-9
D130	polyester flake - lcm	polyethylene terephthalate	25038-59-9
D080	cement liquid dispersant	product classified as non-hazardous.	
D801	mid-temp retarder	product classified as non-hazardous	
D047	antifoam agent	polypropylene glycol	25322-69-4
<b>SPACER</b>			
B389	MUDPUSH* Express	Carbohydrate	proprietary
D206	Antifoaming Agent	Silica Organic Polymer	proprietary
D031	barite	barium sulfate	7727-43-7
		fatty acid amine	proprietary
		ethoxylated alcohol	proprietary
B220	surfactant	glycerol	56-81-5
		2,2'-Iminodiethanol	111-42-2
D167	UNIFLAC* S	aliphatic amide polymer	proprietary

RECEIVED  
Office of Oil and Gas

MAR 26 2015

WV Department of  
Environmental Protection


06/05/2015

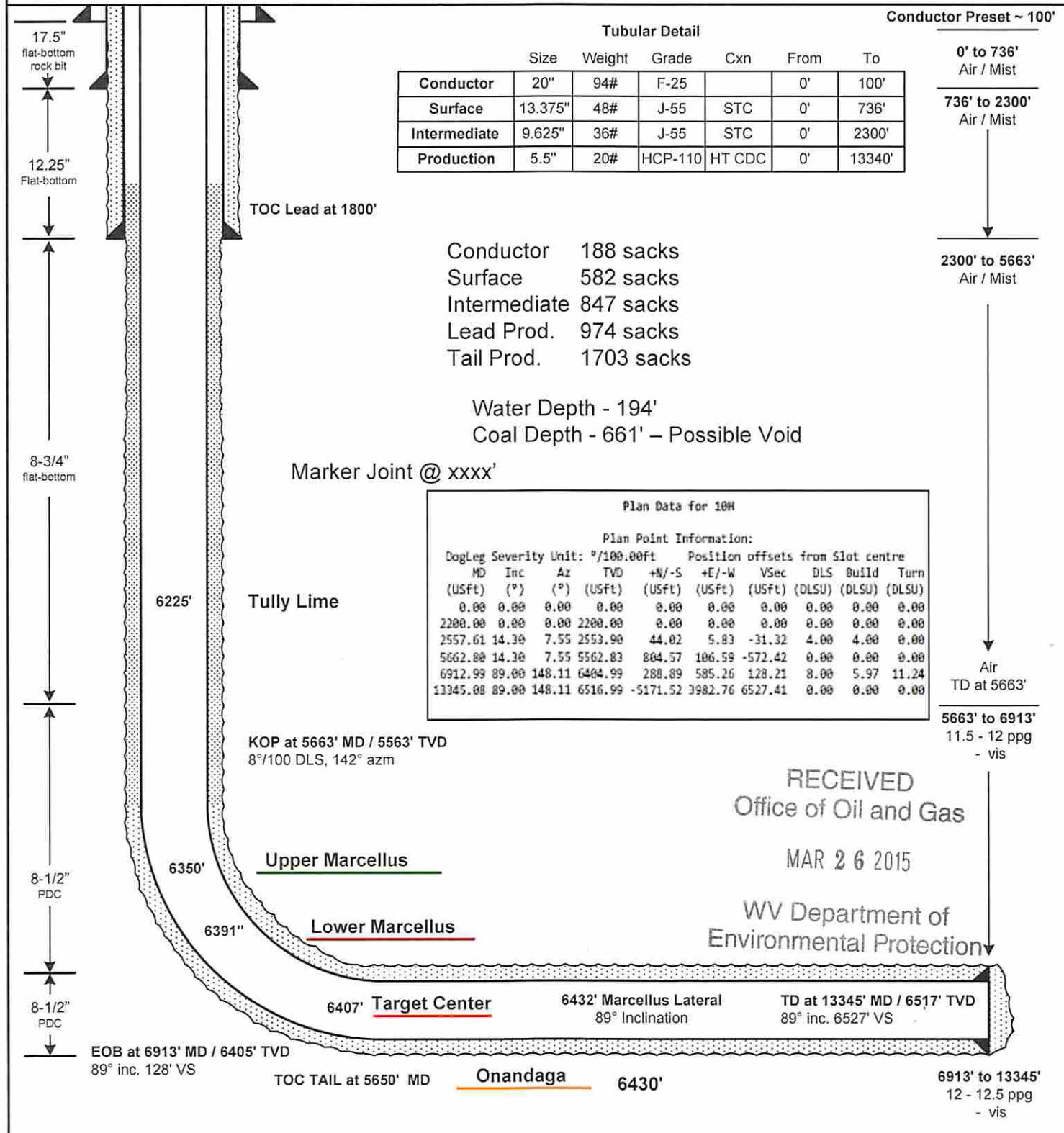
D154	low-temperature extender	non-crystalline silica	7631-86-9
D400	EasyBLOK	boric acid	10043-35-3
D046	antifoam	Fuller's earth (attapulgite)	8031-18-3
D201	basic cements enabler	Polypropylene glycol	25322-69-4
D202	low-temperature solid dispersant	chrySTALLine silica	14808-60-7
D046	antifoam	metal oxide	proprietary
D167	UNIFLAC* S	sulphonated synthetic polymer	proprietary
D065	TIC* Dispersant	formaldehyde (impurity)	50-00-0
D201	basic cements enabler	Fuller's earth (attapulgite)	8031-18-3
D153	Anti-Settling Agent	Polypropylene glycol	25322-69-4
SPACER		aliphatic amide polymer	proprietary
B389	MUDPUSH* Express	Sodium Polynaphthalene Sulfonate	9008-63-3
D206	Antifoaming Agent	Sodium Sulfate	7757-82-6
D031	barite	chrySTALLine silica	14808-60-7
B220	surfactant	metal oxide	proprietary
		chrySTALLine silica	14808-60-7
		Carbohydrate	proprietary
		Silica Organic Polymer	proprietary
		barium sulfate	7727-43-7
		fatty acid amine	proprietary
		ethoxylated alcohol	proprietary
		glycerol	56-81-5
		2,2'-Iminodietanol	111-42-2

Production - Lead

RECEIVED  
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 MAR 26 2015  
 WV Department of  
 Environmental Protection 06/05/2015



Southwestern Energy Company		Proposed Drilling Program			
Well	: GLENN DIDRIKSEN OHI 10	Re-entry Rig	: NA		
Field	: PANHANDLE FIELD	Prospect	: PANHANDLE		
County	: OHIO	State	: WV		
SHL	: 40.114037 Latitude -80.594961 Longitude				
BHL	: 40.09978497 Latitude -80.58080326 Longitude				
KB Elev	: 1287 ft MSL			KB	: NA ft AGL



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 Office of Oil and Gas  
 MAR 26 2015  
 WV Department of  
 Environmental Protection



WW-9  
(9/13)

API Number 47 - 69 -  
Operator's Well No. Glenn Oldrekan OH1 10H

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Co., LLC OP Code 494512924

Watershed (HUC 10) Little Wheeling Creek Quadrangle 648- Valley Grove

Elevation 1382' County 69- Ohio District 3-Liberty

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: closed loop system in place at this time- cuttings will be taken to a permitted landfill.

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? \_\_\_\_\_

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number: 2D0072539/ 2D0413175/ 2D0610306/ 2D0610317)
- Reuse (at API Number: at next anticipated well, API# will be included with the WR-34/DDMR &/or permit addendum.)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain: flow back fluids will be put in steel tanks and reused or taken to a permitted disposal facility.)

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air drill to KOP. Add d/W with SOGN from KOP to TD

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

Additives to be used in drilling medium? see attached sheets

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) \_\_\_\_\_

-Landfill or offsite name/permit number? Arden Landfill 10072, American U2-12954, Country Wide 38390/CID38390, Pine Grove 13688

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature \_\_\_\_\_

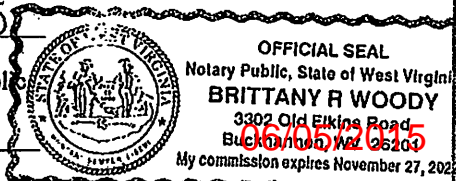
Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Supervisor

Subscribed and sworn before me this 4th day of June, 20 15

Brittany R Woody

Notary Public



My commission expires 11/27/22

4706900191

Operator's Well No. Glenn Didriksen OHI 10H

SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 9.8 Prevegetation pH \_\_\_\_\_

Lime as determined by pH test min. 2 \_\_\_\_\_ Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 600 lbs/acre

Mulch Hay/Straw 2.5 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre
White Grove	15
Red Top	15
Orchard Grass	20

Seed Type	lbs/acre
White Grove	15
Red Top	15
Orchard Grass	20

**Attach:**

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *William Handberg*

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Title: Oil and Gas Inspector

Date: 1-28-15

Field Reviewed?  Yes  No

4706900191

**Marcellus Well Drilling Procedures  
And Site Safety Plan**

SWN Production Co., LLC

47 - 051 -  
Well name: Glenn Didriksen OHI 10H  
Valley Grove, Quad  
Liberty, District  
Ohio County, West Virginia

*WRN  
1-28-15*

Submitted by:

Danielle Southall

1/15/2015

Date:

Title Regulatory Supervisor

SWN Production Co., LLC

Approved by:

Date:

Title:

Approved by:

Date:

Title:

SWN Production Co., LLC – Confidential

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Office of Oil and Gas

MAR 26 2015

WV Department of  
Environmental Protection

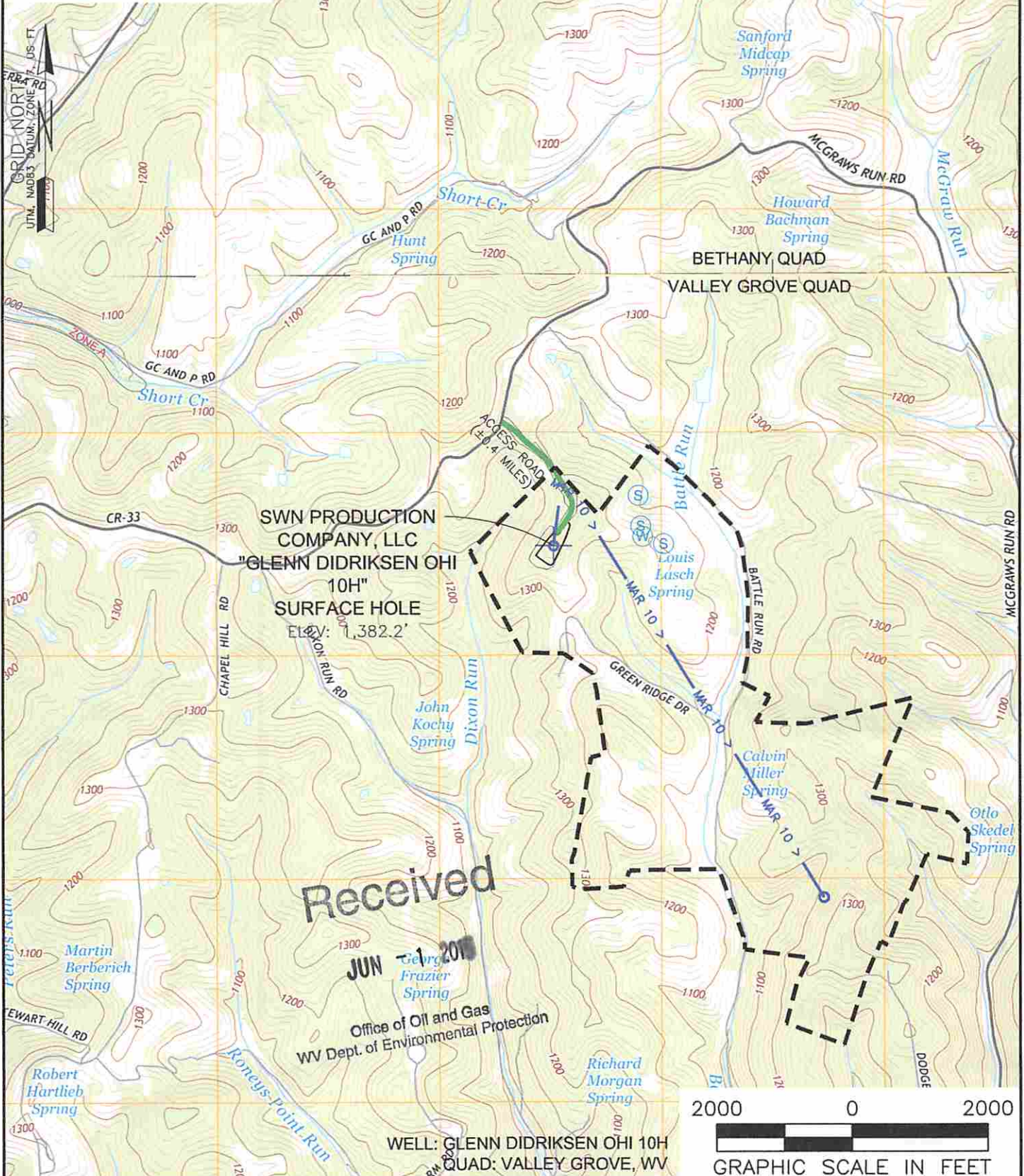
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69-00191

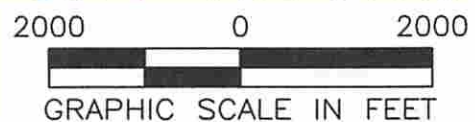


320 O'Bryan Lane • Van Buren, AR 72956  
 Office: 479.474.7916 • Fax: 479.474.2450  
 Surveying • handa-inc.com



SWN PRODUCTION COMPANY, LLC  
 "GLENN DIDRIKSEN OHI 10H"  
 SURFACE HOLE  
 ELEV: 1,382.2'

Received  
 JUN 1 2015  
 Office of Oil and Gas  
 WV Dept. of Environmental Protection

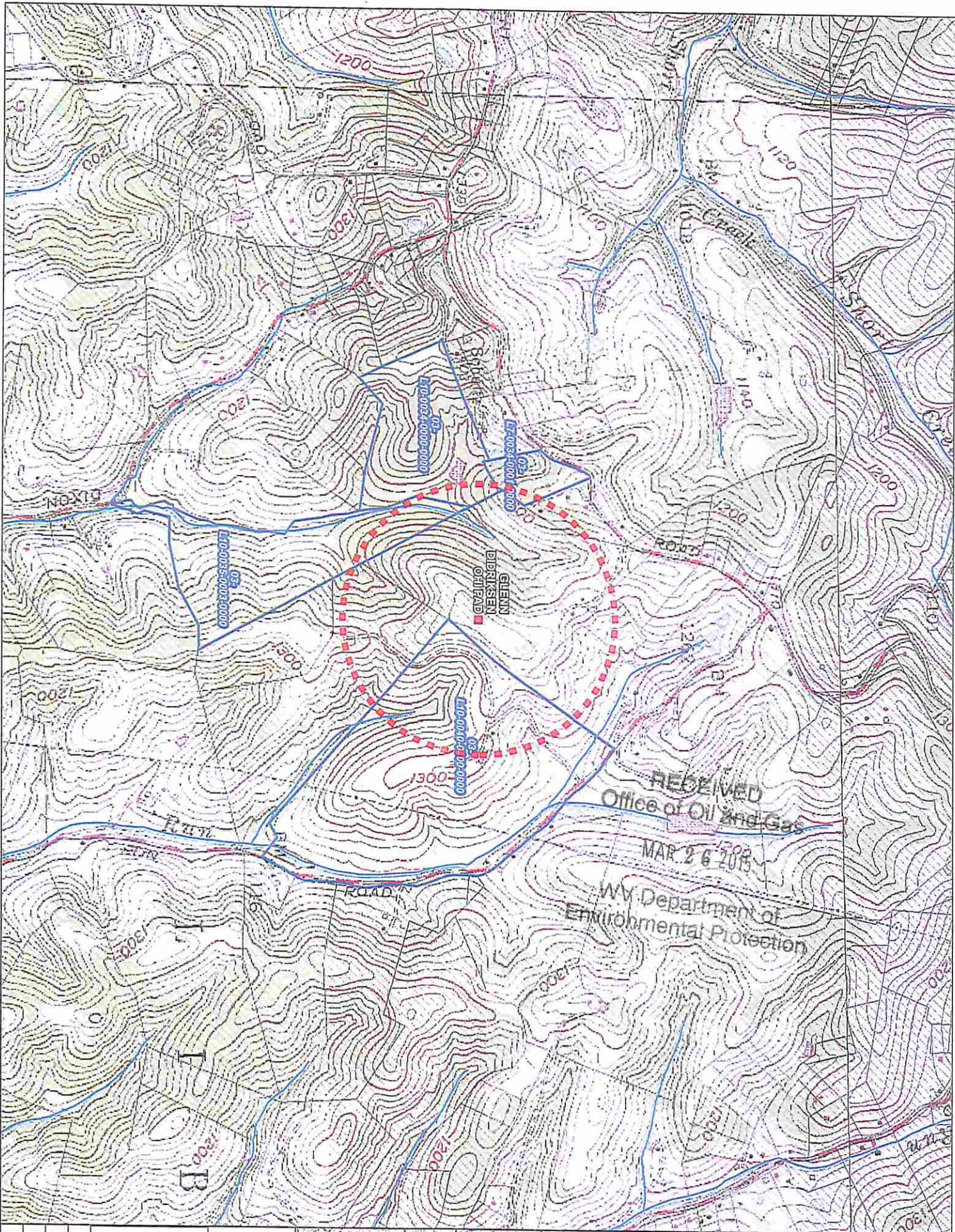


WELL: GLENN DIDRIKSEN OHI 10H  
 QUAD: VALLEY GROVE, WV

NAME AND DISTANCE TO THE NEAREST STREAM: DIXON RUN IS LOCATED ±0.17 MILES NORTHWEST OF THE CENTER OF THE DRILL PAD.		STREAM CROSSING COORDINATES (NAD 83): NO NEW CROSSINGS.		COMPANY: 	
WELL RESTRICTIONS: WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQ FT: >625 FEET		OPERATOR'S GLENN DIDRIKSEN OHI			
FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF OHIO COUNTY, WEST VIRGINIA; MAP NUMBER 54069C0080D; EFFECTIVE DATE JULY 17, 2006.		WELL #: 10H		LOCATION: LIBERTY DISTRICT, OHIO COUNTY, WEST VIRGINIA	
LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊙ EXISTING / PRODUCING WELLHEAD ⊘ ABANDONED WELL ⊙ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR		SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.114037° LONGITUDE: -80.594961°		DATE: 04-25-2015	
(S) EXISTING SPRING (W) EXISTING WATER WELL — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD		BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.099785° LONGITUDE: -80.580803°		REVISIONS: △ UPDATED DHP, 05/28/2015	
				DRAWN BY: S. HUTSON SCALE: 1" = 2000' DRAWING NO: 58796 TOPOGRAPHIC MAP	

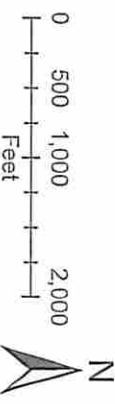
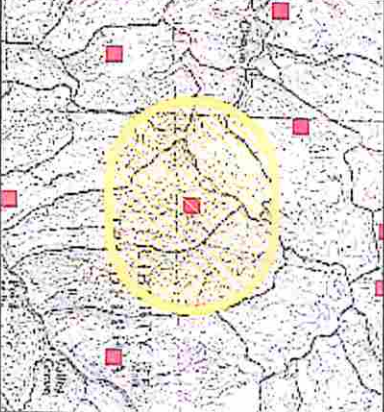
06/05/2015





06/05/2015

-  Site of Interest
-  Streams
-  Parcels With Water Sources (1500' of Source)
-  Other Parcels
-  1,500' Buffer Around Wells

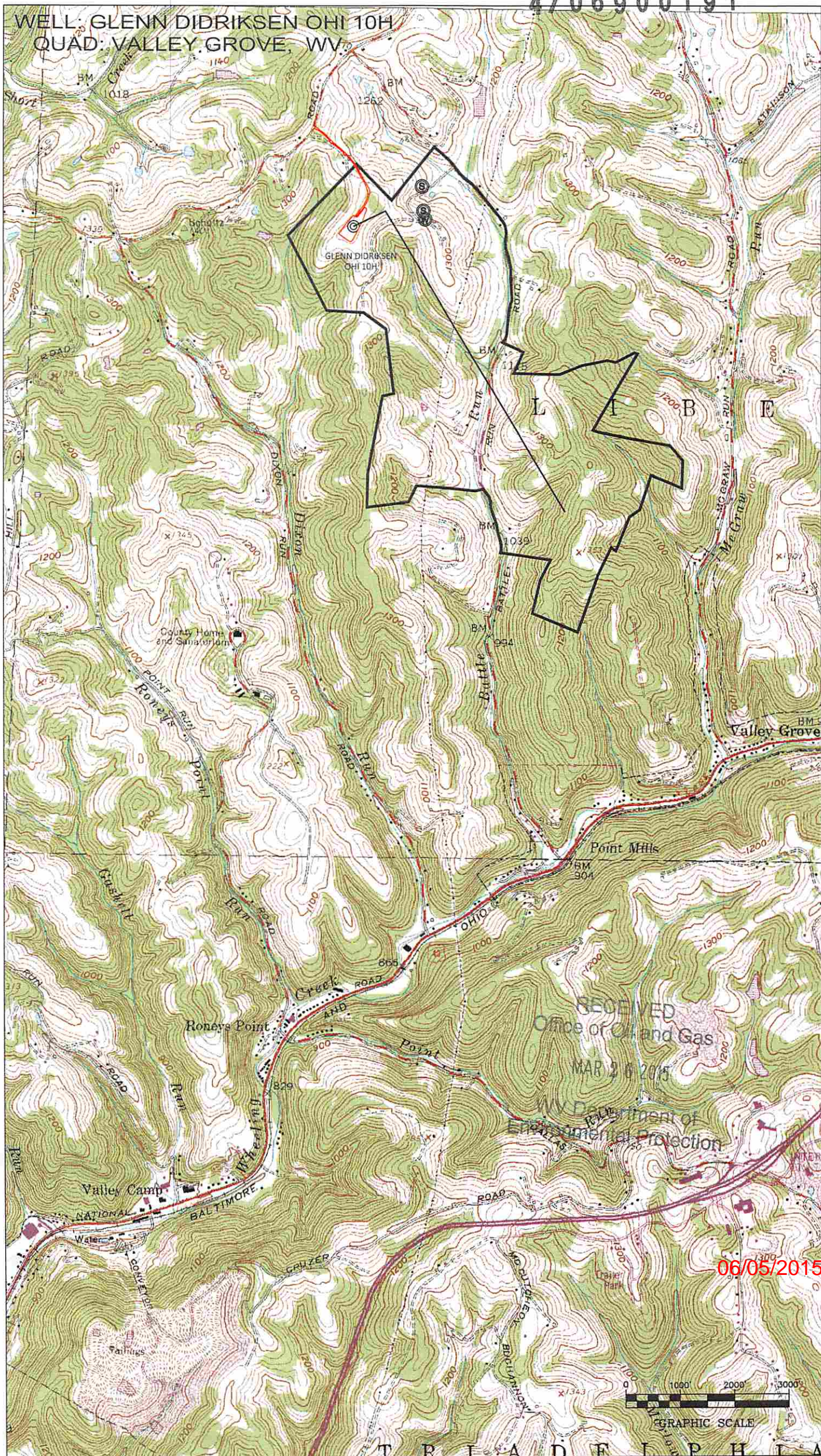


**WV Water Purveyor Map**  
**GLENN DIDRIKSEN OHI PAD**  
 912139  
 OHIO COUNTY

Lat: 40.11401 / Long: -80.595242  
 Date: 9/23/2014  
 Projection: WGS 1984 UTM Zone 17N  
 Scale: 1 inch = 1,000 feet  
 Author: Frank Flierl, Sr. GIS Analyst



WELL: GLENN DIDRIKSEN OHI 10H  
QUAD: VALLEY GROVE, WV



06/05/2015

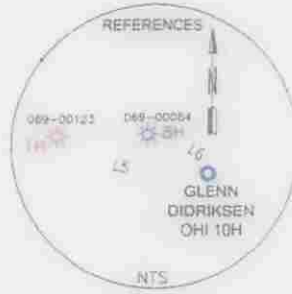
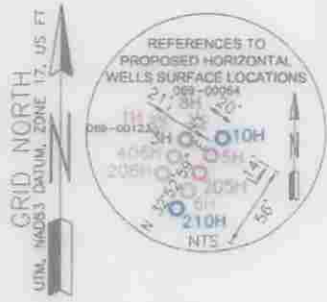




LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	S 13°23'05" E	321.98'	SHL TO LANDMARK	FOUND POST
L2	N 51°23'44" E	1054.29'	SHL TO LANDMARK	FOUND REBAR
L3	N 63°43'40" E	852.68'	SHL TO TPL	
L4	S 31°53'24" E	6431.11'	TPL TO BHL	
L5	N 76°23'04" W	43.26'	SHL TO REF. PNT.	GLENN DIDRIKSEN OHI 1H WELLHEAD (069-00123)
L6	N 57°12'33" W	19.99'	SHL TO REF. PNT.	GLENN DIDRIKSEN OHI 8H WELLHEAD (069-00064)

Latitude: 40°07'30"

Longitude: 80°35'00"



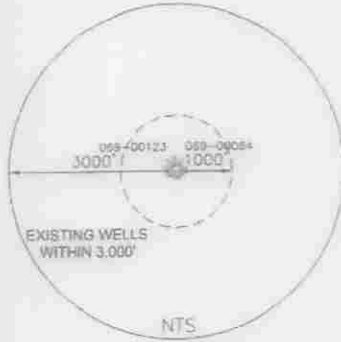
SHL TO "S" #1	N 59°08'54" E	1450.72'
SHL TO "S" #2	N 77°04'01" E	1314.64'
SHL TO WATER WELL	N 83°51'49" E	1318.73'

**NOTES ON SURVEY**

- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 1000 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

**SWN PRODUCTION COMPANY, LLC  
"GLENN DIDRIKSEN OHI 10H"  
SURFACE HOLE  
ELEV: 1,382.2'**

<b>SURFACE HOLE LOCATION (SHL):</b>	
GEOGRAPHIC (NAD83):	
LATITUDE: 40.114037	
LONGITUDE: -80.594961	
UTM (NAD83, ZONE 17, FEET):	
NORTHING: 14,568,517.324	
EASTING: 1,753,659.503	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,440,492.961	
EASTING: 534,516.485	
<b>"TURNING POINT" LOCATION (TPL):</b>	
GEOGRAPHIC (NAD83):	
LATITUDE: 40.114823	
LONGITUDE: -80.592863	
UTM (NAD83, ZONE 17, FEET):	
NORTHING: 14,568,806.224	
EASTING: 1,754,244.763	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,440,581.018	
EASTING: 534,694.873	
<b>BOTTOM HOLE LOCATION (BHL):</b>	
GEOGRAPHIC (NAD83):	
LATITUDE: 40.099785	
LONGITUDE: -80.580803	
UTM (NAD83, ZONE 17, FEET):	
NORTHING: 14,563,345.808	
EASTING: 1,757,642.267	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,438,916.680	
EASTING: 535,730.434	



SURVEYED BY  
TRIPLE H ENTERPRISES,  
WEST UNION, WV.



I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 667

*Darrell Boice*

COMPANY: **SWN** Production Company, LLC

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP  
OFFICE OF OIL & GAS  
601 57TH STREET  
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)

GLENN DIDRIKSEN OHI

OPERATOR'S WELL #: 10H

API WELL #: 47 STATE 69 COUNTY

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS  LIQUID INJECTION STORAGE

WATERSHED: LITTLE WHEELING CREEK ELEVATION: 1382.2'

DISTRICT: LIBERTY COUNTY: OHIO QUADRANGLE: VALLEY GROVE, WV

SURFACE OWNER: GLENN DIDRIKSEN ACREAGE: ±47.93

OIL & GAS ROYALTY OWNER: D&D FAST FOOD, INC. ACREAGE: ±613.43

DRILL  DRILL DEEPER REDRILL FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,517'

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: DEE SOUTHALL

ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300

CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378

<b>LEGEND:</b>	<b>REVISIONS:</b>	<b>DATE:</b> 04-25-2015
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	Δ UPDATED DHP, 05/28/2015	
⊙ EXISTING / PRODUCING WELLHEAD		
⊗ ABANDONED WELL		
⊕ PLUGGED & ABANDONED WELL		
△ CUT CONDUCTOR		
--- LEASE BOUNDARY		
--- 500' DHP BUFFER		
--- MARCELLUS DHP		
--- ABANDONED PATH		
		<b>DRAWN BY:</b> S. HUTSON
		<b>SCALE:</b> 1" = 2000'
		<b>DRAWING NO:</b> 58796
		<b>WELL LOCATION PLAT</b>

06/05/2015

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
----------------------	-----------------------	-----------------------	---------	-----------

See Exhibit "A"

Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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JUN - 3 2015

Office of Oil and Gas  
WV Dept. of Environmental Protection

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: SWN Production Company, LLC.  
 By: *Sean McElwrath*  
 Its: Sean McElwrath, Sr. Landman



EXHIBIT "A"  
 Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A.1, by SWN Production Company, LLC, Operator  
 Glenn Didriksen OHI 10H  
 Ohio County, West Virginia

#	TMP	LEASE	LESSOR	LESSEE	ROYALTY	BK/PG
1	3-L7-42	1-268336-000	D&D Fast Food, Inc. Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	13%	791/455 885/248
2	3-L10-40	1-313594-001	Robert Walter & Donna Jean Lasch, h/w Range Resources-Appalachia, LLC Range Resources-Appalachia, LLC Chesapeake Appalachia, L.L.C.	Great Lakes Energy Partners, L.L.C. Chesapeake Appalachia, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16%	768/793 820/657 820/665 884/73
3	3-L10-40.1	1-385460-000	Ronald M. Scott and Margo L. Scott, h/w NPAR, LLC Chevron U.S.A. Inc. Chesapeake Appalachia, L.L.C.	NPAR, LLC Chevron U.S.A. Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	814/355 827/284 867/713 883/623
4	3-L10-39	1-313594-001	Robert Walter & Donna Jean Lasch, h/w Range Resources-Appalachia, LLC Range Resources-Appalachia, LLC Chesapeake Appalachia, L.L.C.	Great Lakes Energy Partners, L.L.C. Chesapeake Appalachia, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16%	768/793 820/657 820/665 884/73
5	3-L10-38	1-313595-001	J. Matthew Padden & Judith M. Padden Range Resources-Appalachia, LLC Range Resources-Appalachia, LLC Chesapeake Appalachia, L.L.C.	Great Lakes Energy Partners, L.L.C. Chesapeake Appalachia, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16%	767/786 820/657 820/665 884/73
6	3-L10-42	1-385463-000	Richard J. Scott and Karen Sue Scott, h/w NPAR, LLC Chevron U.S.A. Inc. Chesapeake Appalachia, L.L.C.	NPAR, LLC Chevron U.S.A. Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	814/353 827/284 867/713 883/623
7	3-L10-43	1-313596-001	C. Dwaine Butts & Linda J. Butts (H&W) Range Resources-Appalachia, LLC Range Resources-Appalachia, LLC Chesapeake Appalachia, L.L.C.	Great Lakes Energy Partners, L.L.C. Chesapeake Appalachia, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16%	766/543 820/657 820/665 884/73
8	3-L10-49	1-385466-001	Eric W. Lyttle, a married man acting in his sole and separate property NPAR, LLC Chevron U.S.A. Inc. Chesapeake Appalachia, L.L.C.	NPAR, LLC Chevron U.S.A. Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	816/651 827/269 867/713 883/623

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Office of Oil and Gas  
 WV Dept. of Environmental Protection

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# West Virginia Secretary of State — Online Data Services **4706900191**

## Business and Licensing

Online Data Services Help

### Business Organization Detail

*NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.*

#### RANGE RESOURCES - APPALACHIA, LLC

Organization Information							
Org Type	Effective Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC   Limited Liability Company	9/24/1999	9/24/1999	Foreign	Profit			

Organization Information			
<b>Business Purpose</b>	<b>Capital Stock</b>		
<b>Charter County</b>	<b>Control Number</b>		0
<b>Charter State</b>	DE	<b>Excess Acres</b>	
<b>At Will Term</b>	A	<b>Member Managed</b>	MBR
<b>At Will Term Years</b>	0	<b>Par Value</b>	
<b>Authorized Shares</b>			

Addresses	
Type	Address
<b>Designated Office Address</b>	209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
<b>Mailing Address</b>	380 SOUTHPOINTE BLVD, SUITE 300 CANNONSBURG, PA, 15317 USA
<b>Notice of Process Address</b>	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302

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<b>Principal Office Address</b>	380 SOUTHPOINTE BLVD. SUITE 300 CANONSBURG, PA, 15317 USA
<b>Type</b>	<b>Address</b>

<b>Officers</b>	
<b>Type</b>	<b>Name/Address</b>
<b>Member</b>	JOHN H PINKERTON 380 SOUTHPOINTE BLVD, STE 300 CANONSBURG, PA, 15317
<b>Member</b>	ROGER MANNY 380 SOUTHPOINTE BLVD, STE 300 CANONSBURG, PA, 15317
<b>Member</b>	JEFFREY L. VENTURA 380 SOUTHPOINTE BLVD, STE 300 CANONSBURG, PA, 15317
<b>Type</b>	<b>Name/Address</b>

<b>Name Changes</b>	
<b>Date</b>	<b>Old Name</b>
<b>9/12/2007</b>	GREAT LAKES ENERGY PARTNERS, L.L.C.
<b>Date</b>	<b>Old Name</b>

<b>Date</b>	<b>Amendment</b>
<b>9/12/2007</b>	NAME CHANGE: FROM GREAT LAKES ENERGY PARTNERS, L.L.C.
<b>1/10/2000</b>	MERGING RANGE OPERATING CO, QUAL OH, BUFFALO OILFIELD SERVICES INC, NON QUAL OH, J R OPERATING CO. INC, NON QUAL OH, MB OPERATING CO INC, NON QUAL OH INTO GREAT LAKES ENERGY PARTNERS, LLC, QUAL DE LLC THE SURVIVOR
<b>Date</b>	<b>Amendment</b>

<b>Annual Reports</b>	
<b>Date</b>	<b>Filed For</b>
<b>6/12/2014</b>	2014
<b>6/29/2013</b>	2013
<b>6/6/2012</b>	2012
<b>6/8/2011</b>	2011
<b>3/23/2010</b>	2010
<b>4/1/2009</b>	2009
<b>4/16/2008</b>	2008
<b>4/11/2007</b>	2007

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<b>4/10/2006</b>	2006
<b>4/12/2005</b>	2005
<b>3/17/2004</b>	2004
<b>4/8/2003</b>	2003
<b>5/6/2002</b>	2002
<b>4/4/2001</b>	2001
<b>4/20/2000</b>	2000
<b>Date</b>	<b>Filed For</b>

4706900191

For more information, please contact the Secretary of State's Office at 304-558-8000.

Wednesday, March 25, 2015 — 9:32 AM

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4706900191

# SWN

Southwestern Energy®

PO Box 1300  
Jane Lew, WV 26378  
PHONE: (832) 796-1610

January 9, 2015

Ms. Laura Cooper  
WV DEP Office of Oil & Gas  
601 57<sup>th</sup> St., SE  
Charleston, WV 25304

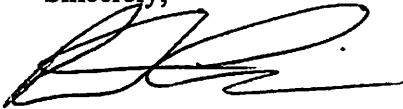
**RE:** SWN's proposed Glenn Didriksen OHI 6H and Glenn Didriksen OHI 10H in Ohio County, West Virginia, Drilling under Battle Run Road.

Dear Ms. Cooper:

SWN Production Company, LLC ("SWN") is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to SWN's right to drill under Battle Run Road. Please be advised that SWN has leased all mineral owners under said route as it relates to the above-referenced well and unit.

Thank you.

Sincerely,



Bob Laine  
Land Field Supervisor  
SWN Production Company, LLC  
PO Box 1300  
Jane Lew, WV 26378

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The Right People doing the Right Things,  
wisely investing the cash flow from  
our underlying Assets, will create Value+

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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE CERTIFICATION

Date of Notice Certification: 3/25/15

API No. 4706900191  
Operator's Well No. Glenn Didriksen OHI 10H  
Well Pad Name: Glenn Didriksen PAD

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	<u>WV</u>	UTM NAD 83	Easting:	<u>534516.5</u>
County:	<u>69- Ohio</u>		Northing:	<u>4440492.9</u>
District:	<u>3-Liberty</u>	Public Road Access:		<u>Battle Run Road</u>
Quadrangle:	<u>648- Valley Grove</u>	Generally used farm name:		<u>Glenn Didriksen</u>
Watershed:	<u>Little Wheeling Creek</u>			

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:

\*PLEASE CHECK ALL THAT APPLY

- 1. NOTICE OF SEISMIC ACTIVITY or  NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED
- 2. NOTICE OF ENTRY FOR PLAT SURVEY or  NO PLAT SURVEY WAS CONDUCTED
- 3. NOTICE OF INTENT TO DRILL or  NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or  WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)
- 4. NOTICE OF PLANNED OPERATION
- 5. PUBLIC NOTICE
- 6. NOTICE OF APPLICATION

OOG OFFICE USE ONLY

- RECEIVED/ NOT REQUIRED
- RECEIVED
- RECEIVED/ NOT REQUIRED
- RECEIVED
- RECEIVED
- RECEIVED

**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

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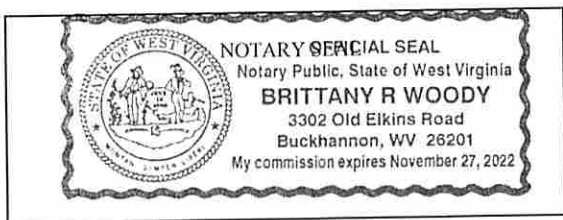
06/05/2015

**Certification of Notice is hereby given:**

THEREFORE, I \_\_\_\_\_, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: SWN Production Co., LLC  
By: Dee Southall  
Its: Regulatory Supervisor  
Telephone: 832-796-1610

Address: P.O. Box 1300  
Jane Lew, WV 26378  
Facsimile: \_\_\_\_\_  
Email: Dee\_Southall@swn.com



Subscribed and sworn before me this 9th day of January 2015  
Brittany R Woody Notary Public  
My Commission Expires 11/27/22

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [deprivacyofficer@wv.gov](mailto:deprivacyofficer@wv.gov).



WW-6A  
(9-13)

4706900191

API NO. 47- 69  
OPERATOR WELL NO. Glenn Didriksen OHI 10H  
Well Pad Name: Glenn Didriksen PAD

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF APPLICATION**

**Notice Time Requirement:** notice shall be provided no later than the **filing date of permit application.**

**Date of Notice:** 3/25/15 **Date Permit Application Filed:** 3/25/15

**Notice of:**

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

**Delivery method pursuant to West Virginia Code § 22-6A-10(b)**

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice  WSSP Notice  E&S Plan Notice  Well Plat Notice is hereby provided to:

SURFACE OWNER(s)

Name: Glenn Didriksen  
Address: 2080 Dement Road  
Triadelphia, WV 26059

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: Alliance Resource GP, LLC % Christine St. John  
Address: 2596 Battle Run Road  
Triadelphia, WV 26059

COAL OPERATOR

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: \*\*\* See Attachment #1  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

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\*Please attach additional forms if necessary

MAR 26 2015

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Environmental Protection  
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912139 GLENN DIDRIKSEN OHI PAD\_1500 FT.\_WATER PURVEYORS

Attachment #1

Date	Pad No.	Pad Name	Full Parcel ID	Owner	Owner Address	Owner City	Owner State	Owner Zip	Owner Phone No.	Assumed/known Water Source Present (Y/N)?
9/23/2014	912139	GLENN DIDRIKSEN OHI PAD	03- L7-0034-0001-0000	DICESARE PASQUALE J	1836 DEMENT RD	TRIADELPHIA	WV	26003	(304)242-7935	Y
9/23/2014	912139	GLENN DIDRIKSEN OHI PAD	03- L10-0040-0000-0000	LASCH ROBT W & DONNA	2605 BATTLE RUN RD	TRIADELPHIA	WV	26059	(304)547-0504	Y
9/23/2014	912139	GLENN DIDRIKSEN OHI PAD	03- L10-0035-0003-0000	PARSONS MICHAEL	218 AINSLEYS RIDGE	TRIADELPHIA	WV	26059	(304)547-1281	Y
9/23/2014	912139	GLENN DIDRIKSEN OHI PAD	03- L10-0034-0000-0000	SHAEFFER M DAVID	1648 DEMENT ROAD	TRIADELPHIA	WV	26059	(304)242-3062 / (304)232-4123	Y

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WW-6A  
(8-13)

API NO. 47- 69 -  
OPERATOR WELL NO. Glenn Didriksen OHI 10H  
Well Pad Name: Glenn Didriksen PAD

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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WW-6A  
(8-13)

API NO. 4706900191  
OPERATOR WELL NO. Glenn Didriksen OHI 10H  
Well Pad Name: Glenn Didriksen PAD

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

#### **Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

#### **Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

#### **Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

#### **Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

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**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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(8-13)

4706900191

API NO. 47- 69 -  
OPERATOR WELL NO. Glenn Didriksen OHI 104  
Well Pad Name: Glenn Didriksen PAD

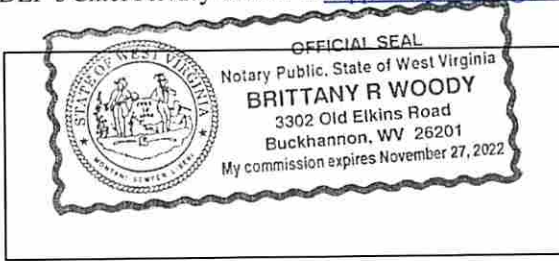
**Notice is hereby given by:**

Well Operator: SWN Production Co., LLC  
Telephone: 832-796-1000  
Email: Dee\_Southall@swn.com

Address: P.O. Box 1300  
Jane Lew, WV 26378  
Facsimile:

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 9th day of January 2015  
Brittany R Woody Notary Public  
My Commission Expires 11/27/22

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**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF INTENT TO DRILL**

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

**Notice Time Requirement:** Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

**Date of Notice:** 01/15/2015      **Date Permit Application Filed:** 3/25/15

**Delivery method pursuant to West Virginia Code § 22-6A-16(b)**

- HAND DELIVERY
- CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

**Notice is hereby provided to the SURFACE OWNER(s):**

Name: GLENN DIDRIKSEN  
Address: 2080 DEMENT ROAD  
TRIDELPHIA, WV 26059

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>WEST VIRGINIA</u>	UTM NAD 83	Easting:	<u>534516.5</u>
County:	<u>OHIO</u>		Northing:	<u>4440492.9</u>
District:	<u>LIBERTY</u>	Public Road Access:	<u>DEMENT ROAD</u>	
Quadrangle:	<u>VALLEY GROVE</u>	Generally used farm name:	<u>GLEN DIDRIKSEN</u>	
Watershed:	<u>UPPER OHIO SOUTH</u>			

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: SOUTHWESTERN ENERGY PRODUCTION COMPANY, LLC  
Address: PO BOX 1300  
JANE LEW, WV 26378  
Telephone: 304-517-6603  
Email: steve\_perkins@swn.com  
Facsimile: \_\_\_\_\_

Authorized Representative: STEVE PERKINS  
Address: PO BOX 1300  
JANE LEW, WV 26378  
Telephone: 304-517-6603  
Email: steve\_perkins@swn.com  
Facsimile: \_\_\_\_\_

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF PLANNED OPERATION**

**Notice Time Requirement:** notice shall be provided no later than the filing date of permit application.**Date of Notice:** 01/15/2015 **Date Permit Application Filed:** 3/25/15**Delivery method pursuant to West Virginia Code § 22-6A-16(c)**

CERTIFIED MAIL                                       HAND  
RETURN RECEIPT REQUESTED                                      DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

**Notice is hereby provided to the SURFACE OWNER(s)**

(at the address listed in the records of the sheriff at the time of notice):

Name: Glenn Didriksen                                      Name: \_\_\_\_\_  
Address: 2080 DEMENT ROAD                                      Address: \_\_\_\_\_  
TRIDELPHIA, WV 26059                                      \_\_\_\_\_

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>WEST VIRGINIA</u>	UTM NAD 83	Easting: <u>534516.5</u>
County: <u>OHIO</u>		Northing: <u>4440492.9</u>
District: <u>LIBERTY</u>	Public Road Access: <u>DEMMENT ROAD</u>	
Quadrangle: <u>VALLEY GROVE</u>	Generally used farm name: <u>GLENN DIDRIKSEN</u>	
Watershed: <u>UPPER OHIO SOUTH</u>		

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: SOUTHWESTERN ENERGY PRODUCTION COMPANY, LLC                                      Address: PO BOX 1300  
Telephone: 304-517-6603                                      JANE LEW, WV 26378  
Email: steve\_perkins@swn.com                                      Facsimile: \_\_\_\_\_

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110  
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin  
Governor

Paul A. Mattox, Jr., P. E.  
Secretary of Transportation/  
Commissioner of Highways

January 28, 2015

James A. Martin, Chief  
Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

Subject: DOH Permit for the Glen Didriksen Pad Well Sites, Ohio County

Glen Didriksen OHI 10H

Dear Mr. Martin,

The West Virginia Division of Highways has transferred Permit #06-2011-0016 for the subject site to Southwestern Energy for access to the State Road for the well site located off of Ohio County Route 33 SLS.

The operator has signed an OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton P.E.  
Regional Maintenance Engineer  
Central Office Oil & Gas Coordinator

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Cc: Brittany Woody  
Southwestern Energy  
CH, OM, D-6  
File



Supplier Name	Product Name	Product Use	Chemical Name	CAS Number
NALCO ONESOURCE	EC6110A	Biocide	Ethanol	000064-17-5
			Glutaraldehyde (Pentanediol)	000111-30-8
			Quaternary Ammonium Compounds	N/A-063
	EC6629A	Biocide	No Hazardous Components	NONE
WEATHERFORD	WBK-133 OXIDIZER	Breaker	Ammonium Persulfate	007727-54-0
	WBK-134	Breaker	Ammonium Persulfate	007727-54-0
			Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7
	WCS-631LC	Clay Stabilizer	Proprietary Non Hazardous Salt	N/A-229
			Water	007732-18-5
	WFR-55LA	Friction Reducer	No Hazardous Components	NONE
	WGA-15L	Gel	Petroleum Distillate Hydrotreated Light	064742-47-8
	WPB-584-L	Buffer	Potassium Carbonate	000584-08-7
			Potassium Hydroxide	001310-58-3
	WXL-101LE	Corsslinker	No Hazardous Components	NONE
	WXL-101LM	Crosslinker	Petroleum Distillate Hydrotreated Light	064742-47-8
	WXL-105L	Crosslinker	Water	007732-18-5
			Ethylene Glycol	000107-21-1
Boric Acid			010043-35-3	
Ethanolamine			000141-43-5	
SCHLUMBERGER	B244 Green-Cide 25G	Biocide	Glutaraldehyde	111-30-8
	L071 Temporary Clay Stabilizer	Clay Stabilizer	Cholinium Chloride	67-48-1
	Breaker J218	Breaker	Diammonium Peroxidisulphate	7727-54-0
	EB-Clean* J475 Breaker		Diammonium Peroxidisulphate	7727-54-0
	Friction Reducer B315	Friction Reducer	Distillates (petroleum) Hydrotreated light aromatic Alcohol Glycol Ether	064742-47-8
	Friction Reducer J609		Ammonium Sulfate	7783-20-2

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Supplier Name	Product Name	Product Use	Chemical Name	CAS Number
BAKER HUGHES	ALPHA 1427	Biocide	Didecyl Dimethyl Ammonium Chloride	007173-51-1
			Ethanol	000064-17-5
			Glutaraldehyde (Pentanediol)	000111-30-8
			Quaternary Ammonium Compound	068424-85-1
			Water	007732-18-5
	BF-7L	Buffer	Potassium Carbonate	000584-08-7
	ClayCare	Clay Stabilizer	Choline Chloride	000067-48-1
			Water	007732-18-5
	Enzyme G-I	Breaker	No Hazardous Components	NONE
	ENZYME G-NE	Breaker	No Hazardous Components	NONE
	FRW-18	Friction Reducer	Petroleum Distillate Hydrotreated Light	064742-47-8
	GW-3LDF	Gel	Petroleum Distillate Blend	N/A-014
			Polysaccharide Blend	N/A-021
	SCALETROL 720	Scale Inhibitor	Diethylene Glycol	000111-46-6
Ethylene Glycol			000107-21-1	
XLW-32	Crosslinker	Boric Acid	010043-35-3	
		Methanol (Methyl Alcohol)	000067-56-1	
FRAC TECH SERVICES	APB01 (AMMONIUM PERSUFATE BREAKER)	Breaker	Ammonium Persulfate	007727-54-0
	B05 (LOW PH BUFFER)	Buffer	Acetic acid	000064-19-7
	BXL03 Borate XL Delayed High Temp	Crosslinker	No Hazardous Components	NONE
	FRW-200	Friction Reducer	No Hazardous Components	NONE
	HVG01 (TURQUOISE-1 BULK)	Gelling Agent	Petroleum Distillate Hydrotreated Light	064742-47-8
	KCLS-4	Clay Stabilizer	No Hazardous Components	NONE
	LTB-1	Breaker	Ammonium Persulfate	N/A

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Supplier Name	Product Name	Product Use	Chemical Name	CAS Number
SCHLUMBERGER	Water Gelling Agent J580	Gel	Carbohydrate Polymer	Proprietary
	Scale Inhibitor B317	Scale Inhibitor	Trisodium ortho phosphate Ethane-1, 2-diol	7601-54-9 107-21-1
	Borate Crosslinker J532	Crosslinker	Aliphatic polyol Sodium tetraborate decahydrate	Proprietary 1303- 96-4
	Crosslinker J610		Aliphatic polyol Potassium hydroxide	Proprietary 1310- 58-3

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